

REMARKS

In accordance with the foregoing, the specification and claims 1, 15, and 42 have been amended. Claims 1-44 are pending and under consideration.

In the Office Action the Examiner noted that claims 1-44 are pending in the application, and the Examiner rejected all claims. The Examiner's rejections are traversed below, and reconsideration of all rejected claims is respectfully requested.

Rejection of Claims Under 35 USC §102(e)

On pages 2-5 of the Office Action, the Examiner rejected claims 1-4, 9-12, 15-17, 20, 24-29, 33, 34, 35, 42 and 44 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent 6,567,217 issued to Kowarz et al. (hereinafter referred to as "Kowarz"). This rejection is respectfully traversed.

Kowarz does not disclose, teach or suggest at least, "a light separation/integration device having an incident side facing the light source and an exit side from which light from the light source exits; and a diffraction device provided on the incident side of the light separation/integration device facing the light source," as recited in claim 1

Kowarz discloses an image forming system having optical sub-systems each comprising a light source 70, a beam splitter 96, a modulator array C 16 and a modulator array F 18. In the optical sub-system disclosed by Kowarz, a light beam emitted from the light source 70 passes through a half-wave plate 92 and enters on a first side of the beam splitter 96. Then, the light beam is divided into two light beams by the beam splitter 96 and the divided light beams exit from second and third sides of the beam splitter 96. The light beams are diffracted by the modulator arrays and enter on the second and third sides of the beam splitter 96. Then, the light beams exit from a fourth side of the beam splitter 96.

However, according to an illumination optical system of the present invention, a light emitted from a light source 22-1 enters a diffraction device 21 and is diffracted by the diffraction device 21. Then, the diffracted light enters on a side of a light separation/integration device 22-2 and exits from another side of the light separation/integration device 22-2.

Further, referring to Fig. 8 of Kowarz, the image forming system has three optical sub-systems for red, green, and blue colors. However, according to the present invention, only one illumination optical system is needed. Referring to Figure 2 of the present invention, three light sources for red, green, and blue colors can be disposed at three sides of the light separation/integration device, respectively. Also three diffraction devices are disposed between

the light sources and the sides of the light separation/integration device facing the light sources, respectively. The red, green, and blue lights are integrated in the light separation/integration device and exit from another side of the light separating/integration device.

Therefore, for at least these reasons, claim 1 patentably distinguishes over the cited reference.

Claims 2-4, 9-12, 33, 34, 35, and 44 depend directly or indirectly from claim 1 and include all of the features of that claim plus additional features which are not taught or suggested by the cited reference. Therefore, it is respectfully submitted that claims 2-4, 9-12, 33, 34, 35, and 44 also patentably distinguish over the cited reference.

Similarly, Kowarz does not disclose, teach or suggest at least, "an illumination optical system comprising ... a light separation/integration device having an incident side facing the light source and an exit side from which light from the light source exits, and a diffraction device provided on the incident side of the light separation/integration device facing the light source," as recited in claim 15. Therefore, for at least the above reasons, it is respectfully submitted that claim 15 also patentably distinguishes over the cited reference.

Claims 16-17, 20, and 24-29 depend directly or indirectly from claim 15 and include all of the features of that claim plus additional features which are not taught or suggested by the cited reference. Therefore, for at least these reasons, it is respectfully submitted that claims 16-17, 20, and 24-29 also patentably distinguish over the cited reference.

Also similarly, Kowarz does not disclose, teach or suggest at least, "a light separation/integration device having incident sides facing the light sources, respectively, and an exit side from which lights from the light sources exit; and diffraction devices provided on the incident sides of the light separation/integration device facing the light sources, respectively," as recited in claim 42. Therefore, for at least the above reasons, it is respectfully submitted that claim 42 also patentably distinguishes over the cited reference.

Rejection of Claims Under 35 U.S.C. §103(a)

On pages 5-6 of the Office Action, the Examiner rejected claims 5-8, 18-19, and 21-23 under 35 U.S.C. §103(a) as being unpatentable over Kowarz, in view of U.S. Patent Application Publication 2003/0025842 to Saccomanno (hereinafter referred to as "Saccomanno"). This rejection is respectfully traversed.

Claims 5-8 depend directly or indirectly from claim 1 and include all of the features of that claim plus additional features which are not taught or suggested by the cited references.

Therefore, it is respectfully submitted that claims 5-8 also patentably distinguish over the cited references.

Claims 18-19 and 21-23 depend directly or indirectly from claim 15 and include all of the features of that claim plus additional features which are not taught or suggested by the cited references. Therefore, it is respectfully submitted that claims 18-19 and 21-23 also patentably distinguish over the cited references.

On pages 6-7 of the Office Action, the Examiner rejected claims 30, 40 and 41 under 35 U.S.C. §103(a) as being unpatentable over Kowarz, in view of Saccomanno, and further in view of U.S. Patent 6,512,502 issued to Ho et al. (hereinafter referred to as "Ho"). This rejection is respectfully traversed.

Claims 30, 40 and 41 depend indirectly from claim 15 and include all of the features of that claim plus additional features which are not taught or suggested by the cited references. Therefore, it is respectfully submitted that claims 30, 40 and 41 also patentably distinguish over the cited references.

On pages 7-8 of the Office Action, the Examiner rejected claims 13, 14 and 31 under 35 U.S.C. §103(a) as being unpatentable over Kowarz in view of Ho. This rejection is respectfully traversed.

Claims 13 and 14 depend indirectly from claim 1 and include all of the features of that claim plus additional features which are not taught or suggested by the cited references. Therefore, it is respectfully submitted that claims 13 and 14 also patentably distinguish over the cited references.

Claim 31 depends indirectly from claim 15 and includes all of the features of that claim plus additional features which are not taught or suggested by the cited references. Therefore, it is respectfully submitted that claim 31 also patentably distinguishes over the cited references.

On page 8 of the Office Action, the Examiner rejected claims 32, 36-39 and 43 under 35 U.S.C. §103(a) as being unpatentable over Kowarz. This rejection is respectfully traversed.

Claims 32 and 36 depend directly or indirectly from claim 1 and include all of the features of that claim plus additional features which are not taught or suggested by the cited references. Therefore, it is respectfully submitted that claims 32 and 36 also patentably distinguish over the cited references.

Claims 37-39 depend directly from claim 15 and include all of the features of that claim plus additional features which are not taught or suggested by the cited references. Therefore, it

is respectfully submitted that claims 37-39 also patentably distinguish over the cited references.

Claim 43 depends directly from claim 42 and includes all of the features of that claim plus additional features which are not taught or suggested by the cited references. Therefore, it is respectfully submitted that claim 43 also patentably distinguishes over the cited references.

Summary

Claims 1-44 are pending and under consideration. It is respectfully submitted that none of the references taken alone or in combination disclose the present claimed invention.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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July 18, 2005

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